

REMARKS

The present application concerns a metal component for a fuel cell.

Preliminary Matters

Applicant thanks the Examiner for accepting the drawings filed on December 24, 2008, and for allowing claims 1-3, 30-34, 36 and 38.

Rejection Under 35 U.S.C. § 103

On page 2 of the Office Action, claims 22, 23, 27, 28 and 39 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over either Nishida et al. (JP 2000-21418), Fujii et al. (JP 2001-297777) or Kito et al. (JP 2001-345109), each in view of Saito et al (U.S. Patent No. 6,348,279).

Applicant's Response

Applicant respectfully traverses the rejection on the grounds that a *prima facie* case of obviousness has not been established because the cited documents do not teach, suggest, motivate, nor provide other reasons to reach each and every limitation of the present invention.

In this regard, claim 22 recites a surface roughness as expressed in R_{\max} of 1.5 μm or less, while the Office Action admits that Nishida et al, Fujii et al, and Kito et al do not recite a surface roughness of 1.5 μm or less. Applicants further submit that Saito et al do not recite a surface roughness as expressed in R_{\max} of 1.5 μm or less, but instead discloses measuring surface roughness of $R_a = 0.1$ to 10 μm . See, column 1, line 61 bridging to column 2, line 9.

Additionally, Applicants submit that the surface roughness of $R_a = 0.1$ to $10\text{ }\mu\text{m}$ in Saito et al do not necessarily possess the claimed properties (e.g., a surface roughness as expressed in R_{max} of $1.5\text{ }\mu\text{m}$ or less) of the present invention, for at least the following reasons.

Saito et al state that the contact area with the electrode portion needs to be ensured, in order to decrease contact resistance. *See*, column 3, lines 34-40. In order to ensure the contact area, Saito et al teaches measuring the average roughness on the entire surface, and thus Saito et al measures R_a .

On the other hand, the present invention is directed to solving a different problem than Saito et al, and hence is directed to a different aspect of surface roughness, *viz.*, R_{max} (maximum peak to valley profile height). *See*, page 30, lines 6 to 15 of the present specification. It is necessary to not have an extremely thin area of the noble metal cover film in order to obtain excellent corrosion resistance. Also, the noble metal cover film is thin in the recessed portion on the surface of the metal base plate. *See*, page 8, lines 6 to 13 of the present specification. When the maximum roughness increases ($R_{\text{max}} > 1.5\mu\text{m}$), extremely thin areas of the noble metal cover film are formed, so that the corrosion resistance deteriorates.

Accordingly, in order to obtain excellent corrosion resistance, it is necessary to have no roughness with emphasized profiles ($R_{\text{max}} > 1.5\text{ }\mu\text{m}$), and thus consequently, with respect to the present invention, R_{max} is very important, and R_a is irrelevant.

Among reasons why R_a can not be used, it is noted that even though the R_a value may be small, there can be some areas having roughness with profiles wherein R_{max} exceeds $1.5\text{ }\mu\text{m}$, with respect to which extremely thin areas of the noble metal cover film will be formed, and the purposes of the presently claimed invention will not be achieved.

Additionally, Saito et al conducts an acid treatment (specifically, immersion in acid solution) as a method of controlling R_a surface roughness. *See*, column 4 lines 35 to 44, and column 6 lines 39 to 47. However, when the surface is treated by the acid treatment, R_{max} increases, because of grain boundary corrosion or the like; thus, the present invention employs different techniques, such as rolling and electrolytic polishing, to achieve the desired R_{max} . *See*, page 31 line 2 to page 32 line 3 of the present specification.

Accordingly, Applicant submits that a *prima facie* case of obviousness has not been established in the present case, because the combination of Nishida et al., Fujii et al., Kito et al., and Saito et al. do not teach or suggest each and every limitation of claim 22. Further, claims 23, 27, 28 and 39 are at least patentable over the cited documents by virtue of their dependency from claim 22.

In view of the above, Applicant respectfully submits that reconsideration and withdrawal of the § 103 rejection of the present claims are proper, and such action is hereby earnestly solicited.

If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned attorney at the local, D.C. telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,


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